

PATENT
0649-0710P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Hidekazu SAKAI et al. Conf No.: 3756
Appl. No.: 09/468,538 Group No.: 1752
Filed: December 21, 1999 Examiner: A. Walke
For: SILVER HALIDE COLOR PHOTOGRAPHIC LIGHT-SENSITIVE
MATERIAL FOR MOVIE

RECEIVED
DEC 28 2001
TC 1700DECLARATION UNDER 37 CFR §1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Hidekazu Sakai, do hereby declare and state that:

I graduated from Osaka University, Faculty of Graduate School/Faculty of Science, Course of Organic Chemistry receiving a Master's degree in March of 1988;

I have been employed by Fuji Photo Film Co., Ltd., since April of 1988 until the present time;

I have been engaged in research and development on the method for using the organic element for the color photograph at the Ashigara Laboratories of Fuji Photo Film Co., Ltd. from 1988 to the present date.

The following comparative experimentation have been prepared.

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Comparison A

Comparative Example A ("Comparison A") has been prepared

If Comparison A (using compound F-1 and compound F-2 in the same amount as in Sample No. 205 of Table 2-1 in the present specification) is added to Table 2-1', the results of Comparative Example A (i.e., Comparison A) are shown in the following Table 2-1'. The results reveal that the sharpness and the white background density are in the range of: sharpness: 19, white background density: 0.2.

A review of Table 2-1' reveals that the claimed combination of the present invention provides extremely excellent effect compared to the comparative examples.

TABLE 2-1'

Sample No.	Kind of Dye Solid Fine Particle Dispersion in 1 st Layer	Cyan Coupler of the Invention			Amount of Dye Coated	
		Kind	Amount Used (mol%)	Amount of 4 th Layer Coated (%)	F-1 (g/m ²)	F-2 (g/m ²)
201	None	None	-	100	0.040	0.093
Comparison A	D	None	-	100	0.030	0.088
202	D	None	-	100	0.040	0.093
203	D	None	-	100	0.043	0.115
205	D	(1)	70	69	0.030	0.088

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'Table 2-1' continued

<u>Sample No.</u>	<u>Sharpness</u>	<u>White Background Density</u>	<u>Remarks</u>
201	18	-	Comparison
Comparison A	19	0.02	Comparison
202	22	0.04	Comparison
203	34	0.09	Comparison
205	39	-0.04	Invention

As is apparent from the results of Comparison A in Table 2-1', since the addition amount of Compounds F-1 and F-2 is between those of Sample Nos. 201 and 202, the values of the sharpness and white background density are in the ranges of 18-22 and 0.0-0.04, respectively. That is, as is apparent from the results of Sample Nos. 201, 202 and 203, when the addition amount of Compounds F-1 and F-2 is increased, the sharpness is increased and the white background density is lowered. Accordingly, when the addition amount of Compounds F-1 and F-2 is between that of Sample No. 201 and that of Sample No. 202, the sharpness is between 18 and 22, and the white background is between 0.0 and 0.04.

In comparison, in Sample No. 205 according to the present invention, the sharpness is 39, which is extremely high, and the white background density is -0.04, which is extremely low. That is, both the values of the sharpness and the white background

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density of Sample No. 205 is extremely excellent as compared with the values of Comparison A.

Also, in the other samples according to the present invention in Table 2-1 of the present specification, there are also samples having a white background density of 0.00, but the sharpness in the other samples of the present invention extremely exceeds 22. Accordingly, it is seen that in all the samples according to the present invention, both of the sharpness and white background density are unexpectedly superior.

Comparison A'

The following comparative data were obtained by using the dye solid fine particle dispersion which was obtained by use of the dye of Fujita '866, and using the phenol coupler of Fujita '866 or the cyan coupler of Sakai '898, as a coupler.

The dye solid fine particle dispersion for the 1st layer D' was prepared in the same manner as in the dye solid fine particle dispersion for the 1st layer D used in Example I-2 of the present specification, except that the dye was changed from Dye IV-1 to III-34 used in Example 1 of Fujita '866.

On the other hand, the samples were prepared in the same manner as in Example I-2 of the present specification, except that the cyan coupler (ExC) used in the 4th layer of Sample 201 described in Example I-2 was changed to Cyan Coupler C-3 used in

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Example 1 of Fujita '866 or Phenol Coupler 41 described in Sakai '898, and the composition and combination, etc., were changed as shown in Table 2-1" below.

The obtained samples were evaluated in the same manner as in Example 1-2 of the present specification.

The results are shown in Table 2-1", below.

The "White Background Density" were a relative value which was represented on the basis of the value of Sample 201'. Also, the Dyes F-1 and F-2 used were used in the same amount between each the samples.

The amount of the 4th layer coated was changed to the amount necessary for obtaining the same cyan color-forming density under the same exposure amount in each the samples.

Table 2-1"

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Table 2-1"

Sample No.	Kind of Dye Solid Fine Particle Dispersion in 1 st Layer	Cyan Coupler of the Present Invention			Sharpness	White Background Density
		Kind	Amount Used (mol%)	Amount of 4th Layer Coated (%)		
201' (Comparison)	None	None (Use of only Coupler C-3 of Fujita)	-	110	16	-
Comparison A' (Comparison)	D'	None (Use of only Coupler C-3 of Fujita)	-	110	20	0.04
Comparison B (Comparison)	None	None (Use of Cyan Coupler 41 in Sakai)	70	69	24	0.00
205' (Invention)	None	None (Use of Cyan Coupler 41 in Sakai)	70	69	39	-0.01

As is apparent from the results of Table 2-1", in Sample 205' according to the present invention, the sharpness is 39 which is very high, and the white background density is -0.01 which is very excellent.

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That is, it is seen that in the sample having the unexpected excellent sharpness and white background density can be obtained by the combination of the present invention, as compared with the sample of Comparison A' which comprises well-known combination.

That is, though in the sample of Comparison A' in which the dye solid fine dispersion is used in Sample 201' using the well-known phenol based coupler, the sharpness is certainly improved, but the increase of the value is merely 4, and conversely the white background density is increased (i.e., which is worsened).

On the other hand, in Sample 205' according to the present invention, the white background is not increased, and further the sharpness is extremely increased to 23, and is extremely improved, as compared with Sample 201'.

Also, the effect due to the difference of the coupler used in the presence or absence of the dye solid fine particle dispersion in 1st layer of the present invention is described below.

From the comparison between Sample 205' according to the present invention and Comparison B, it is seen that the sharpness of Sample 205' is increased by 15 as compared with Comparison B.

Further, from the comparison between Sample 201' using the well-known phenol coupler and Comparison A' using the well-known

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phenol based coupler, it is seen that the sharpness of Comparison A' is slightly increased (i.e., is increased by 4) as compared with Sample 201'.

Therefore, the effect due to use of the cyan coupler of the present invention in use of the dye solid fine particle dispersion of the present invention is extremely excellent, and can be unexpected from that due to the conventional phenol coupler.

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S. Code 1001 and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

By Hidekazu Sakai
Hidekazu Sakai

Date December 10, 2001